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EDITORIAL

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Seven years of NeoBiota – the times, were they a changin'?

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Background

During the NEOBIOTA conference 2010 in Copenhagen (see http://www.neobiota.eu/conferences for an overview of all conferences), the attendants decided to transform the serial of the European Group on Biological Invasions *Neobiota*, edited by Ingo Kowarik and Uwe Starfinger, into an international, open access journal. In the following year, *NeoBiota* was relaunched under the same name, but with an upper case 'B', by Pensoft Publishers. In the editorial of the first issue, a large group of co-editors claimed for openness in covering a broad range of issues in invasion science, including the intersections with applied and social sciences, and referring to different groups of taxa and geographical regions (Kühn et al. 2011). What happened since then? We think that it is now time to shortly reflect how the new *NeoBiota* journal has developed in the first years of its infancy – based on some data on the published papers, the addressed topics and the geographical background of our contributing authors.

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First of all, we are pleased with the increasing visibility of *NeoBiota* – thankworthy to many papers by our esteemed authors that you, our readers, found interesting. Since the relaunch in 2011, we passed through two stages with respect to visibility in major bibliometric databases, namely ISI Web of Science (since 2017 Clarivate Analytics, http://www.webofknowledge.com) and Scopus (https://www.scopus.com/home.uri). We were scrutinised for the first five years by both companies. All papers published since 2015 by *NeoBiota* are now listed by Web of Science as well as Scopus. But also papers published before 2015 are well visible: up to October 2017, they were cited on average, more than 6 times in Web of Science, the more conservative of the two bibliometric databases recognised in this study.

Some early highlights

Indeed, a range of papers seems to have clearly raised timely scientific interest and hence contributed to get successfully listed in both bibliometric databases. For brevity, we just present some prominent examples (cited at least 15 times in Web of Science), starting with the two most cited *NeoBiota* papers. The first was on the support of major hypotheses in invasion biology by Jeschke et al. (2012). This was some sort of seminal work, leading also to further analyses on this topic (Jeschke 2014). The second was a conceptual framework on prioritising alien species for management (Kumschick et al. 2012), based on the approach introduced by Nentwig et al. (2010), that also had several follow-up papers (Kumschick et al. 2015, 2017, Kumschick and Richardson 2013).

Bridging the two aforementioned topics is the study of Colautti et al. (2014). They used hypotheses in invasion biology and improved tests of these by introducing a simple mathematical framework to quantify the invasiveness of species. Also the work of Atwood and Meyerson (2011) was based on favourite hypotheses in invasion biology. They argue that the lack of consensus across studies that test EICA (evolution of increased competitive ability; Blossey and Nötzold 1995) may be in part due to the lack of consistent definitions and varying experimental designs. They provide a design framework that will increase data harmony across future studies and will facilitate examinations of any potential selection pressure driving evolution in the invaded range. Humair et al. (2014) featured an essay on why experts disagree on common concepts and risk assessments. Gassó et al. (2012) modelled the potential distribution range of invasive plant species in Spain.

The work of Kowarik and von der Lippe (2011) on secondary wind dispersal of an invasive species in urban road corridors is one of a suite of related papers on dispersal of alien plant species along urban roads (von der Lippe and Kowarik 2007a, b, 2008) and was followed by another experimental study (von der Lippe et al. 2013). Saul et al. (2013) provided a seminal study that lead to a more detailed one (Saul and Jeschke 2015) on the role of ecoevolutionary experience in invasion success. The study of MacNeil et al. (2013) shows how analysing the functional response of alien gammarid

species enhances understanding of the success or failure of invasions in the face of various resident predators. Lastly, checklists of alien species are used by many others, such as the inventory of invasive alien species in China (Xu et al. 2012).

Submissions before and after 2015

Here we analyse whether certain characteristics have changed for papers submitted to *NeoBiota* before getting listed on Web of Science and Scopus in 2015 and after getting listed. In particular, we will explore whether rejection rates, paper lengths, countries of authors and topics have changed. We considered all papers submitted to *NeoBiota* from 2011 until September 2017. Although looking hard, we did not find any publication trying this sort of analysis for other papers of new journals with sufficient time before and after being listed in the relevant bibliometric databases.

The number of submissions was rather stable (Figure 1), with slightly more papers submitted per year after being listed (not accounting for incomplete 2017). Until 2014, 162 papers were submitted to *NeoBiota* (i.e. before being listed) and 112 since 2015 until September 2017 (after being listed). In the prelisting phase, we accepted 89 papers, after that 52 (see Figure 2), resulting in a rejection rate of 45.1% and 53.6%, respectively. The difference is not significant, though ($\chi^2 = 1.59$, df = 1, p = 0.21). The length of the published papers did not change significantly (mean±standard deviation: 17.1 ±6.9 vs 19.0 ±8.1, t = -1.34, p = 0.18) between the two periods.

Although a lower number of papers were published so far in the second period, the number of individual authors of published papers increased from 168 to 191; the median number of authors increased only insignificantly (W = 2073, p = 0.3) from

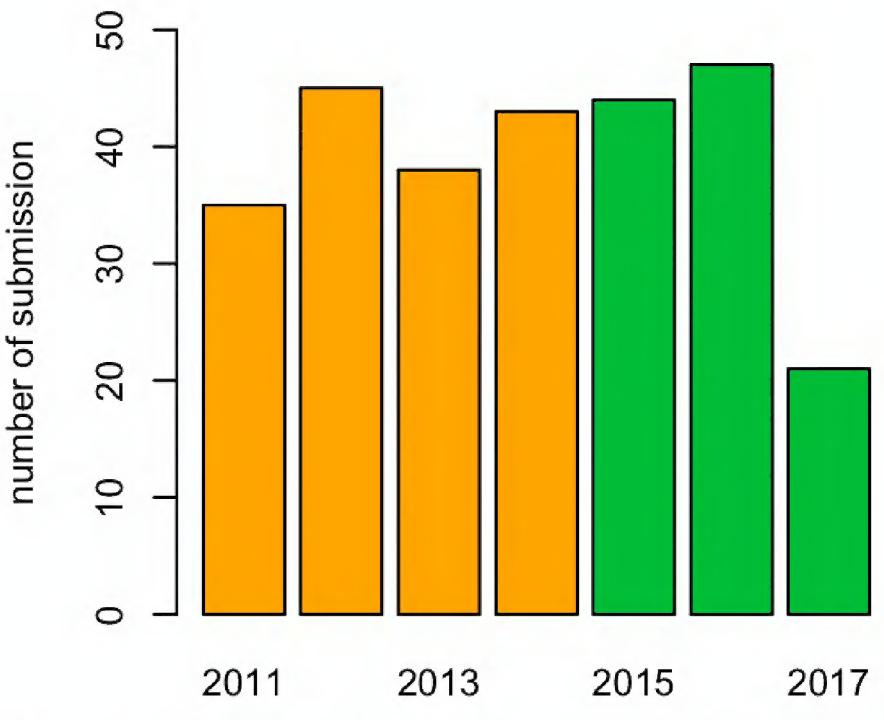

Figure 1. Number of papers submitted to *NeoBiota* between 2011 and September 2017, differentiated into those submitted before (orange) the journal got listed in Web of Science as well as Scopus, and those after (green).

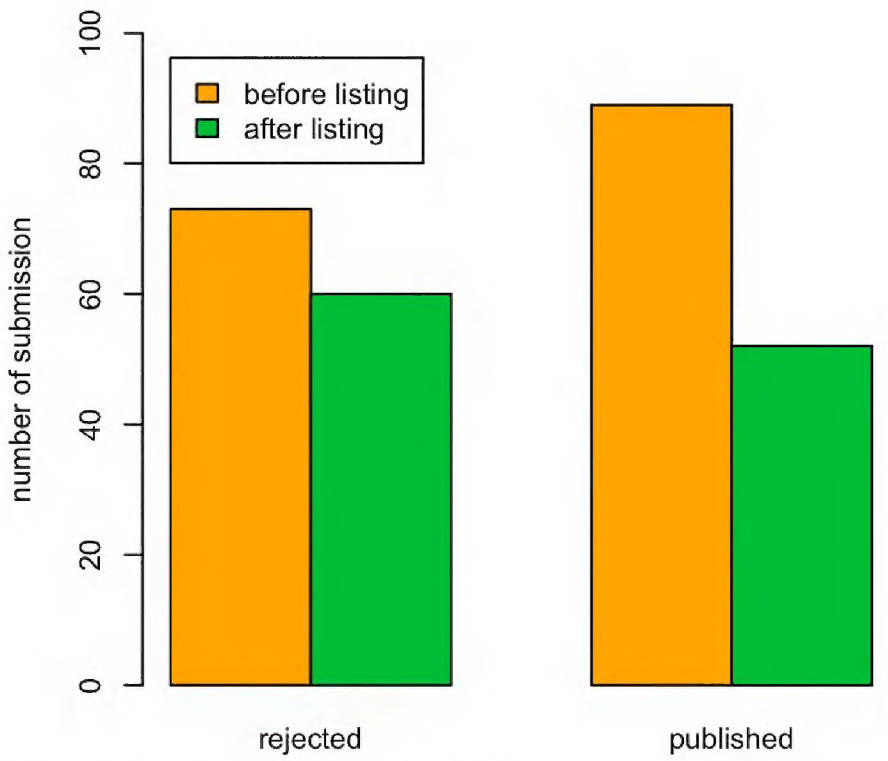

Figure 2. Number of papers submitted to *NeoBiota* that were accepted or rejected before and after being listed in Web of Science and Scopus in 2015.

3 to 4 per paper. Yet, there were some remarkable changes in the countries of the institutions the submitting authors were affiliated with (Figure 3, Table 1). In the years 2011–2014, especially submissions coauthored by researchers from Spain, but also Canada, China, Ecuador, Germany, The Netherlands, Switzerland, UK, USA were over-represented compared with the second period. In 2015–2017, especially Austria, New Zealand, South Africa were over-represented compared with the first period. These changes were significant ($\chi^2 = 133.7$, df = 38, $p < 0.0001$). Still, in terms of the total number of submissions we observe the geographical bias stated by Pyšek et al. (2008), i.e. Europe, North America and Australia are over-represented, many parts of Africa, Asia and South America are under-represented.

Topics covered

The topics covered by *NeoBiota* range across a variety of issues (Figure 4). Most prominent, among the papers rejected as well as accepted in both periods, is the term "plant", indicating a taxonomic bias (Pyšek et al. 2008). Modelling studies as well as distributional analyses are more represented in those papers that were rejected. This mirrors the availability of methods and data. The Global Biodiversity Information Facility GBIF (http://gbif.org) is a great source of information. Unfortunately, it does have many biases in occurrence records as well as taxa (Beck et al. 2014, Meyer et al. 2015, 2016). Similarly, MaxEnt (Elith et al. 2011) is an extremely powerful tool for distributional analyses, if properly used (Merow et al. 2013, Kramer-Schadt et al. 2013). Combining not revised GBIF data with standard settings of MaxEnt, though, leading to poor

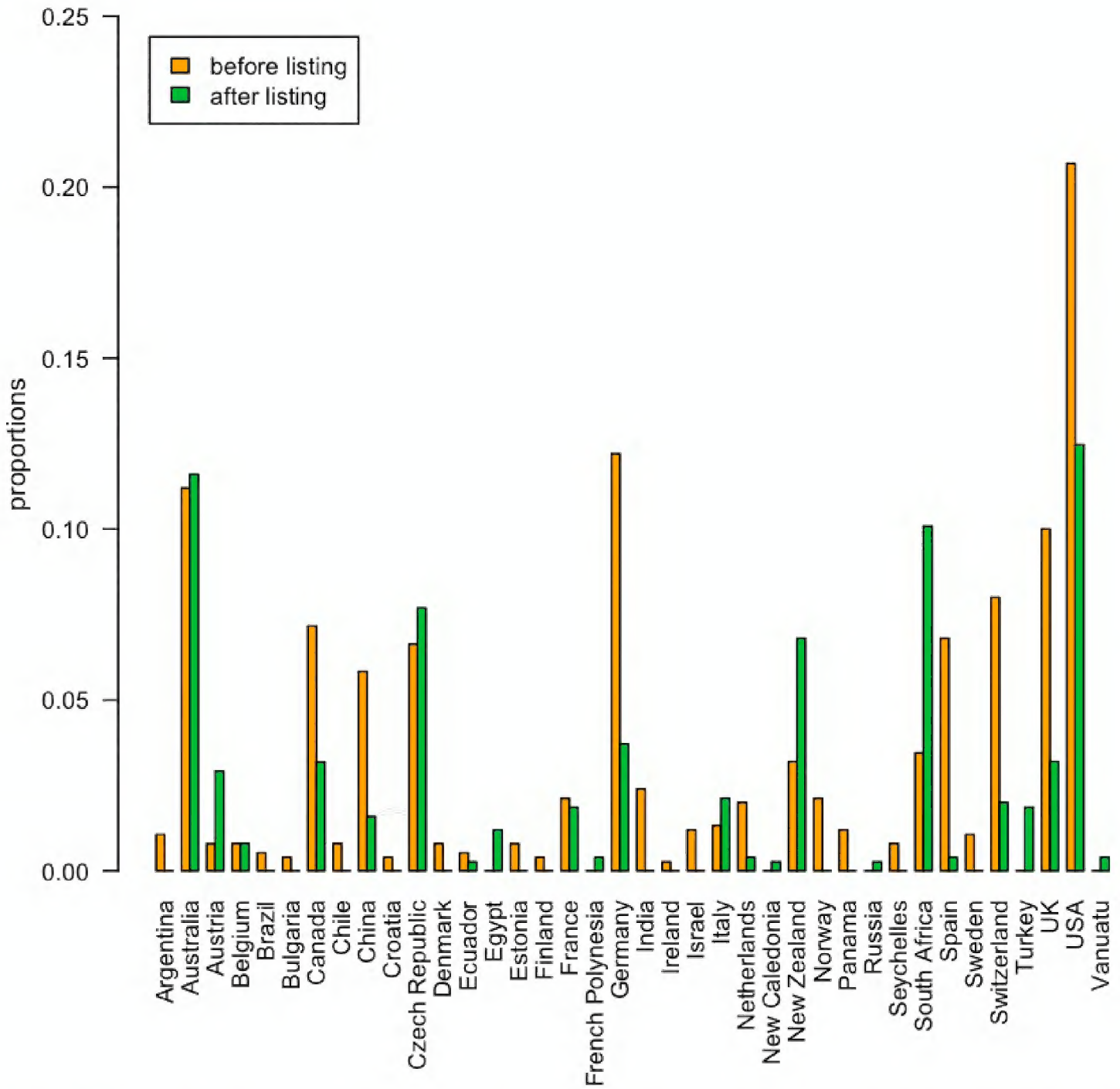

Figure 3. Proportional contribution to the total number of papers of countries in which the institutions of the submitting authors are located (multiple affiliations can result in multiple countries per author). Papers submitted to *NeoBiota* before (orange) and after (green) being listed in Web of Science and Scopus are shown.

ecological results, can be a reason for an immediate rejection. But also successful distributional analyses were published on taxa that were not mainstream, until recently. Saltmarsh et al. (2016) published an analysis on the distribution and abundance of exotic earthworms in Alaskan forests. A combination of ecophysiological models with a correlative model to project coypu (*Myocastor coypus*) distribution under climate change was presented by Jarnevich et al. (2017). Tabak et al. (2015) modelled the distribution of Norway rats (*Rattus norvegicus*) on offshore islands in the Falkland Islands.

Also quite prominent in both periods were papers on risk assessment. This topic even made it into the so far (December 2017) only "highly cited" paper, i.e. among the top cited papers of their publication cohort: namely Kumschick et al. (2017), comparing different impact-assessment tools on alien amphibians. There were on one hand

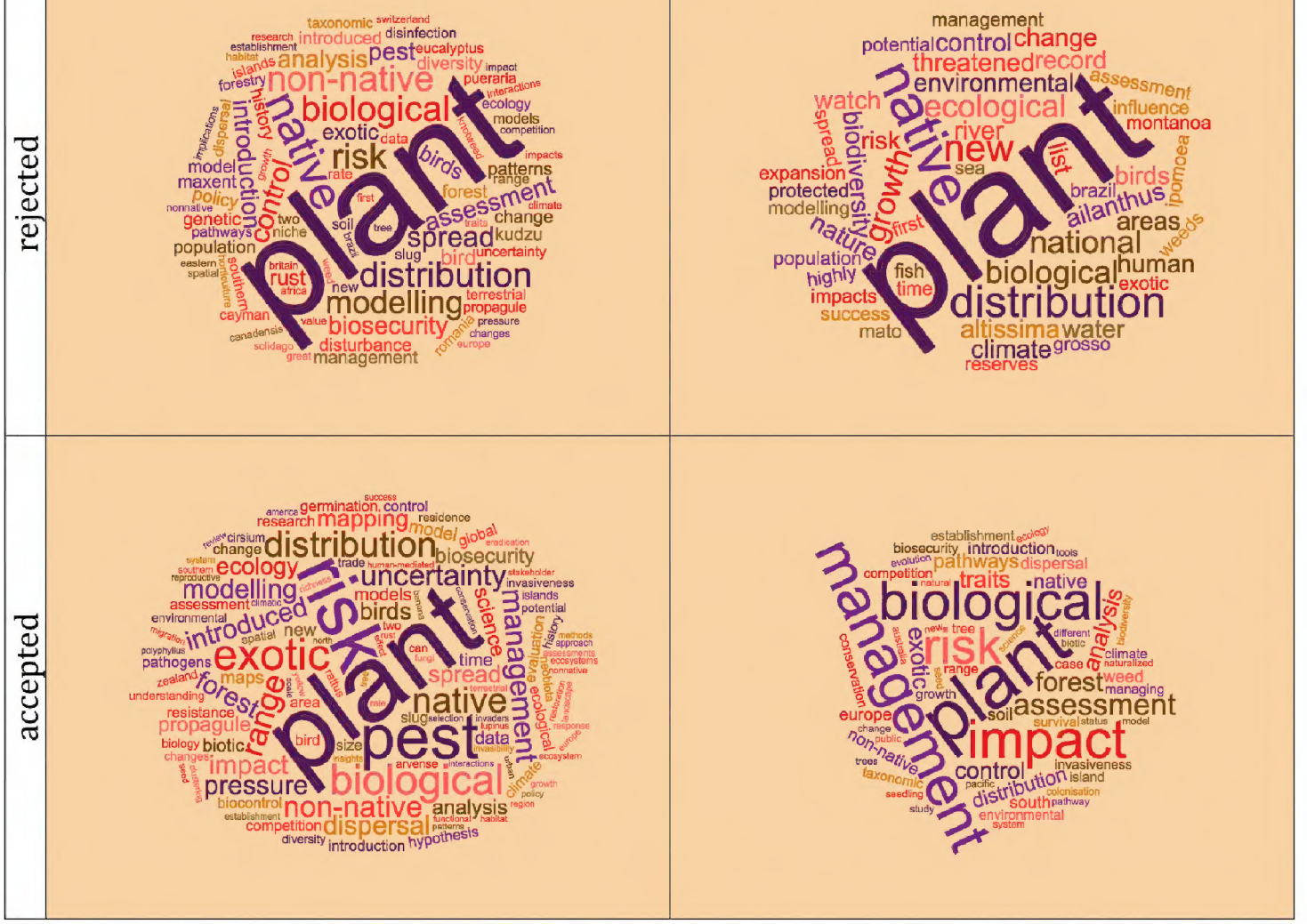

Figure 4. Word cloud (www.wortwolken.com) of words used in the title and provided in the keywords of those paper *submitted* before and after being listed in bibliometric databases in 2015 and of papers subsequently rejected or accepted. Words present in singular and plural were transformed into singular; only words with ≥3 occurrences are displayed, the terms *invasion*, *invasive*, *alien* and *species* were deleted.

Table 1. Geographical background of authors, illustrated by the number of countries of the institutions the submitting authors are affiliated with (multiple affiliations can result in multiple countries per author) submitted to *NeoBiota* before and after being listed in Web of Science and Scopus in 2015.

Countries	before 2015	since 2015
Argentina	4	0
Australia	28	29
Austria	3	11
Belgium	2	2
Brazil	2	0
Bulgaria	1	0
Canada	27	12
Chile	2	0
China	22	6
Croatia	1	0
Czech Republic	25	29
Denmark	2	0

Countries	before 2015	since 2015
Ecuador	2	1
Egypt	0	3
Estonia	3	0
Finland	1	0
France	8	7
French Polynesia	0	1
Germany	46	14
India	6	0
Ireland	1	0
Israel	3	0
Italy	5	8
Netherlands	5	1
New Caledonia	0	1
New Zealand	8	17
Norway	8	0
Panama	3	0
Russia	0	1
Seychelles	2	0
South Africa	13	38
Spain	17	1
Sweden	4	0
Switzerland	20	5
Turkey	0	7
UK	25	8
USA	78	47
Vanuatu	0	1

specific risk assessments for, e.g. a pest under climate change (Hong et al. 2015), or studies relating invasiveness and impact of *Cactaceae* (Novoa et al. 2016). On the other hand, there were also more general ones related to, e.g. the EU regulation on invasive species (Tanner et al. 2017), a complete set of biota, namely those of soil (McNeill et al. 2017), or the role of traits (Emiljanowicz et al. 2017). Other trait studies were also more prominent in the second phase: Buru et al. (2016) compared growth traits between abundant and uncommon forms of *Dolichandra unguis-cati* (Bignoniaceae), a non-native vine in Australia.

In the second period, 'management' and 'impact' became frequent topics, with a large overlap, resulting in jointly 18 papers published. Here we focus just on a few with more or less unusual topics or having more general implications. Nielsen and Fei (2015) explore the potential of utilizing the Analytic Hierarchy Process (AHP; Saaty and Vargas 2001), an information-driven tool to flexibly prioritise various invasion scenarios by incorporating a broad spectrum of management data. They tested the flexibility of the AHP management tool with two distinct invasion-stage-specific prioritisations for Amur honeysuckle (*Lonicera maackii*) and conclude that the flexible AHP

tool could be useful for prioritizing management of exotic plant invasions. Laypersons' perceptions of invasive alien plant species and their attitudes towards their management were analysed by Lindemann-Matthies (2016) in Switzerland. Few participants could correctly identify pictures of alien species. Knowing a species, though, resulted in a higher positive attitude towards their management, but the perceived beauty of a species inhibited support of their management. Planted forests are a major source of invasive alien trees in Europe. Therefore Brundu and Richardson (2016) introduced the '*Code of Conduct on Planted Forest and Invasive Alien Trees*' relevant to stakeholders and decision makers in the 47 Member States of the Council of Europe. Panetta and Gooden (2017) review different management options for biodiversity, recognizing impact and action thresholds for invasive plants in natural ecosystems. They conclude that economic and ecological considerations are aligned when invaders are sustainably maintained at relatively low abundances.

Some highlights since 2015

NeoBiota always claimed to be open minded and aimed at facilitating scientific discussion (Kühn et al. 2011). We therefore always welcome papers raising scientific discourse. One of the most controversial papers probably was that of Hoffmann and Courchamp (2016). The authors argued that human-mediated invasions are part of the spectrum of species movements, not a unique phenomenon, because species self-dispersing into novel environments are subject to the same barriers of survival, reproduction, dispersal and further range expansion as those assisted by people. They proposed an all-encompassing framework of species range expansion, including alien species. This paper was challenged by Wilson et al. (2016), who state that invasion science now is not only a biological phenomenon, but that the human dimension of invasions is a fundamental component in the social-ecological systems in which invasions need to be understood and managed.

Other *NeoBiota* highlights published since 2015 that were well perceived, cover several different aspects: Using data from the DAISIE database (www.europe-aliens.org) (DAISIE 2009), Pergl et al. (2017) address whether established alien plants, mammals, freshwater fish and terrestrial invertebrates with known ecological impacts are associated with particular introduction pathways (release, escape, contaminant, stowaway, corridor and unaided; Hulme et al. (2008). Woodford et al. (2016) review problems arising from the management of biological invasions and argue that they can be either tame (with simple or obvious solutions) or wicked, where difficulty in appropriately defining the problem can make complete solutions impossible to find. On a similar topic Kuebbing and Simberloff (2015) surveyed land stewards of a major conservation NGO. Their results indicate that these managers are selective rather than profligate, targeting species that are having a demonstrable impact or are likely to do so. Another aspect of impacts of alien species are human health problems, reviewed by Schindler et al. (2015) for Europe.

Outlook

So far, *NeoBiota* seems to be well perceived by the invasions science community. We have found some differences regarding submissions before and after the listing of *NeoBiota* by Web of Science and Scopus. It would be interesting to see, how submission rate, rejection rate, involved countries and featured topics would change in the future, not only following recent advances in the scientific literature (Ricciardi et al. 2017), but also in response to increasing Scopus CiteScores or receiving an Web of Knowledge impact factor.

Despite the broad range of issues addressed by the previous contributions of 463 individual authors from 38 countries to *NeoBiota*, we are still short of papers covering social, legal or economic aspects. We thus strongly encourage further submissions also from these topical areas. Still we are confident that *NeoBiota* will gain an increasing role in all aspects related to the multi-disciplinary topics of invasion science and its interconnections with other disciplines.

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